

tion were located in Europe (N = 19), followed by Asia (N = 9), North America (N = 7), and Oceania (N = 6). More research is needed to determine the extent of PE education from other sources (e.g. other disciplines and non-university based).

HP4**DRUG COSTS DEVELOPMENT AFTER PATENT EXPIRY IN THE THE NETHERLANDS**

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Prior to patent expiry of a drug, the manufacturer will generally increase marketing efforts in order to maintain market-share. The introduction of generics will lead to strong competition, forcing the original patent holder to change their marketing strategy. These effects, together with other factors (e.g. governmental price legislation) may lead to increasing drug expenditures. In order to increase price competition the Dutch government plans to modernize the drug reimbursement system, which is conceived to inadequately control drug prices. In particular, drug prices may not relevantly decrease due to lack of incentives for price competition. **OBJECTIVES:** To investigate the magnitude of effects on market-share and drug prices, we evaluated trends in drug volume and costs after patent expiry for enalapril, fluoxetine and ranitidine in the The Netherlands. **METHODS:** Governmental price, volume and reimbursement policies were evaluated in order to provide a framework for developments after patent expiry. Drug use was measured as Defined Daily Doses (DDD) per 1000 population, derived from the InterAction DataBase, comprising pharmacies in the North of the The Netherlands. Drug costs were calculated per DDD. Estimated trendlines for drug costs and share of drugs in the different trade-channels (specialité, parallel, generic) were compared. **RESULTS:** After the patent expired, costs per DDD—for enalapril, fluoxetine and ranitidine—decreased with 61%, 51% and 69% respectively. For enalapril and fluoxetine statistical significant differences in trendlines were found. For all investigated drugs, generic products rapidly took over the majority of the market-share (over 75%). Nearly all new users received a generic drug after patent expiry. Further results will be presented on omeprazol and simvastatine, with very recent patent expiries. **CONCLUSIONS:** Our findings indicate that patent expiry may cause price competition leading to cost decreases. This is opposite the current opinion that the drug reimbursement system would inadequately control drug prices.

Session IV**NEUROLOGICAL/PAIN****NPI****HEALTH-RELATED QUALITY OF LIFE IN NEUROMUSCULAR DISEASES**

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OBJECTIVES: To assess the health related quality of life in common neuromuscular disease. **METHODS:** The health related quality of life (HrQol) of 73 patients (mean age: 54.0 ± 16.9;

w/m: 41:32) with Amyotrophic Lateral Sclerosis (ALS, n = 25), Myasthenia Gravis (MSG, n = 32) or Facioscapulohumeral Muscular Dystrophy (FSHD, n = 16) has been assessed using the SF-36 and the EQ-5D. **RESULTS:** Measuring the HrQol using the EQ-5D for the three diseases the overall score differs slightly depending on sex (female 0.79 ± 0.22, male 0.66 ± 0.29). In contrast the disease specific overall score for patients with ALS was 0.53 ± 0.28, with FSHD 0.78 ± 0.13 and for patients with MSG 0.87 ± 0.19. This distribution was also true for the VAS (ALS 37.5 ± 13.59 FSHD 59.06 ± 17.91, MSG 65.63 ± 24.02). The results of the SF 36 (n = 72) subscale bodily pain and mental health for the three subgroups were not different. Differences were found for the subscales physical function (ALS 41 ± 31, FSHD 45 ± 35, MSG 72 ± 29), role limitations due to physical problems (ALS 2 ± 7, FSHD 40 ± 43, MSG 49 ± 51), general health perceptions (ALS 31 ± 14, FSHD 52 ± 21, MSG 39 ± 49), vitality (ALS 37 ± 15, FSHD 52 ± 21, MSG 44 ± 44), social functioning (ALS 56 ± 29, FSHD 82 ± 16, MSG 81 ± 25) and role limitations due to emotional problems (ALS 24 ± 60, FSHD 81 ± 34, MSG 65 ± 58). The results that the physical functioning of the ALS and FSHD patients are similar, but the general health perception of the FSHD patients needs further evaluation. An additional aspect is the strong role limitation due to emotional problems of ALS patients. **CONCLUSIONS:** Neuromuscular diseases have a considerable impact on health-related quality of life. Patients with ALS and FSHD have diminished scores in the EQ-5D overall score and in the VAS. The SF-36 reflects in more detail the influence of the three diseases on the different dimensions of health-related quality of life.

NP2**COST ASSOCIATED WITH PERSISTENCY AMONG PATIENTS WITH PARTIAL SEIZURE DISORDER SWITCHING TO OXCARBAZEPINE MONOTHERAPY**

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OBJECTIVES: Patients refractory to initial anti epileptic drugs (AEDs) monotherapy may undergo a change in their therapeutic regimen. This study sought to compare the economic costs of care of patients refractory to initial AED therapy that was not oxcarbazepine (Trileptal®), who were switched to oxcarbazepine (OXC) monotherapy and who stayed on OXC for an entire 12 months follow-up (Cohort A), compared with the costs of the patients who failed to be on the same therapy within one year (Cohort B). **METHODS:** Retrospective data from the Pharmetrics integrated medical and pharmacy claims database, which includes 57 managed care plans, were analyzed. Adult patients receiving treatment with AEDs between January 1, 2000 and March 30, 2002 were studied. Data were analyzed from 6 months prior to treatment failure with either carbamazepine, phenytoin, or valproic acid, and through a post-therapy period defined as 12 months after switching to OXC monotherapy. **RESULTS:** 169 adult patients were observed. 31.4% (53/169) patients stayed on OXC for an entire year of follow-up, constituting Cohort A. 116 patients (Cohort B) either switched to another drug or opted for a combination therapy at some point within one year. Demographic and clinical characteristics were statistically similar between cohorts. Although pre-index treatment costs are similar between the two cohorts (\$9434 +SD \$14,512 versus \$9430 + \$15,229), the mean cost of care in Cohort A decreased by \$1123 while the mean cost rose for Cohort B during the post-failure period (p < 0.01). Post-failure

costs for cohort B were substantially higher than for cohort A (\$8312 + \$11,218, versus (\$11,760 + \$18,155, $p = 0.03$). **CONCLUSIONS:** The persistent use of OXC provided a less costly alternative for managed care organizations among patients switched to OXC after initial monotherapy failure. This study finding encourages the clinical practitioner to promote patients' persistency on the OXC monotherapy when medically appropriate.

NP3

A COST-UTILITY MODEL OF TREATMENT OF NEWLY DIAGNOSED EPILEPSY IN GERMANY COMPARING TOPIRAMATE, CARBAMAZEPINE AND VALPROATE

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OBJECTIVES: According to current guidelines, there is no hierarchy between antiepileptic drugs (AED), and the choice should take into account efficacy, tolerability, pharmacokinetic properties, impact on quality of life, patient preference and cost. Older AEDs such as carbamazepine and valproate are often prescribed, with cost constraints cited as reason for the treatment choice. Given the relative scarcity of long term comparative trials, economic modelling is appropriate to assess whether lower drug costs justify the use of older AEDs. **METHODS:** A Markov model was developed to capture long-term outcomes (1–15 years) of treatment strategies (first- and second-line monotherapies). Expected treatment costs (routine medical costs, adverse event costs, and drug costs) were calculated by disease severity for 2004 from the perspective of a third party payer. Results of a discrete choice experiment exploring whether people with epilepsy were willing to trade months of life against improvements in seizure control and side effects were used to calculate expected utilities. A range of relevant sensitivity analyses were undertaken. **RESULTS:** At one year, treatment with only older AEDs was least costly, but also resulted in the lowest QALY gains. Both the use of topiramate instead of an older AED as second-line, or instead of an older AED as first-line were associated with incremental cost-effectiveness ratios (ICER) between 20,000€ and 30,000€/QALY gained. At longer time horizons both the ICER of offering topiramate second-line, and the ICER of offering topiramate first-line gradually improved. **CONCLUSIONS:** Topiramate either as first- or second-line monotherapy delivers extra health benefits for a slight and acceptable increase in costs, showing that topiramate treatment is cost-effective. The decreasing ICERs over time show the importance of longer treatment retention. Choice of AED should therefore be based on patient-specific criteria only.

NP4

12-MONTHS COSTS OF PARKINSON'S DISEASE IN GERMANY—RESULTS OF A PROSPECTIVE STUDY

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OBJECTIVES: To prospectively evaluate the health economic burden of patients with Parkinson's disease (PD) in Germany over a 12-months observation period. **METHODS:** Direct and indirect costs were evaluated in 145 patients with PD (mean age: 67.3 ± 9.6 years) in Germany. Clinical evaluations were performed at baseline, 3, 6 and 12 months. Relevant economic data were documented in a special patient diary over the 12-month

period. Costs (2002€) were derived from various German medical economic resources. Costs were calculated from the perspective of health insurance (Gesetzliche Krankenkasse, GKV), transfer payment providers and the individual patient. Costs are presented as means ± standard deviation (SD). **RESULTS:** We estimated per patient direct, indirect, and total costs for the twelve-month period. The costs from the perspective of the health insurance GKV consist of direct medical costs 3770 ± 7020€; including rehabilitation (1080 ± 3320€), hospitalization (2200 ± 5590€), outpatient treatment (80 ± 50€), non-medical treatment (390 ± 580€) and ambulatory diagnostic procedures (20 ± 40€). In addition, drug costs for anti-parkinsonian treatment were 3350 ± 2720€. Non-medical direct costs calculated from the GKV perspective were estimated to be 1040 ± 3350€, which included transportation (30 ± 50€), special equipment (880 ± 3100€), social services (30 ± 310€), and sickness benefit (110 ± 1330€). The total medical (including drug costs) and non-medical direct costs for the GKV were 8160 ± 8770€ and depends on disease severity and the occurrence of motor complications. For the nursing insurance payments of 2990 ± 6590€ were calculated, for the retirement insurance 1410 ± 3210€, and patient and caregiver costs of 3150 ± 5320€. Total indirect costs amounted to 6590 ± 13,150€. On average, a total of 22,400 ± 25,410€ per patient were attributable to PD. **CONCLUSION:** The result of the study clarifies the high financial burden of PD on society and patients. This underscores the need for further economic and medical research to optimize treatment for PD.

EYE/EAR/SKIN

EEI

SUNBURNS ACCORDING TO GENDER

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To feel personally concerned with a risk, one needs to experience it. **OBJECTIVES:** The ICARE programme's objective is to assess patients' knowledge of the consequences of sun exposure. **METHODS:** Every patient coming to an outpatient pharmacy in order to obtain advice or treatment following a sunburn was remitted a questionnaire assessing their knowledge of the consequences of sun exposure. **RESULTS:** Men and women act differently towards sun exposure. If 41% expose themselves more than 2 hours per day (W 40%, M 43%) and if more than 50% expose themselves between 11h00 and 16h00, then more than 70% do it after 16h00. The only difference concerns sun exposure before 11h00, for which 35% of women and only 19% of men are concerned ($p = 0.03$). Concerning sun protection with protective skin lotions, 59% of women report applying them regularly vs. 33% of men ($p = 0.003$). The back and arms are the most often expressed localisation sunburns for women (50% and 43%) vs. the back and face for men (52% and 38%). Eight percent (8%) admitted that their sunburn messed their vacation up, 38% reported sleep disturbance and 26% couldn't do what they wanted because of their sunburn. Assessment of QoL using the DLQI showed evidence of quality of life impairment stronger for women than for men, mean scores being respectively 4.89 and 2.72 ($p < 0.05$). **CONCLUSIONS:** The results of our study are similar to the one of McCarthy et al where men exhibited a significantly higher frequency of sunburn, employed fewer sun-protective measures, and demonstrated less knowledge concerning sun safety information and skin cancer than women. The direct consequence of this is a profound impairment of quality